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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,615	03/01/2000	Douglas Duane Coolbaugh	BU9-99-190 (13020)	3878

7590

05/28/2002

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EXAMINER

NGUYEN, CUONG QUANG

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 05/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/516,615

Applicant(s)

COOLBAUGH ET AL.

Examiner

Cuong Q Nguyen

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 is/are allowed.
- 6) ☒ Claim(s) 24, 25, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) 26, 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 2811

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 30 is objected to because of the following informalities: in line 8 of claim 30, the expression "said second layer being comprised of SiGe polysilicon." should be changed to "said first layer being comprised of SiGe polysilicon."

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US 5,973,954).

Regarding claim 24, Wu et al. discloses a semiconductor device including a poly-poly capacitor structure comprising: a lower plate electrode (84); an insulator structure (82) formed on the lower plate electrode; an upper plate electrode (102) formed on the insulator structure, wherein the upper plate electrode (102) formed of SiGe polysilicon (Wu et al.'s col.5, lines 49-50). See Wu et al.'s Fig.7.

Regarding claim 25, Wu et al. teaches that the lower plate electrode(84) formed of polysilicon. Wu et al.'s col.4, lines 20-25.

Art Unit: 2811

Claim 27 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wu et al.

Wu et al. teaches that a gate electrode (78) of a FET formed of polysilicon (Wu et al.'s col.4, lines 11-12) which is the same material for forming the lower plate electrode. See Wu et al.'s Fig.7.

Wu et al. does not teach that the lower plate electrode is formed of polysilicon from the gate electrode (78) of the FET. However, the limitation "one said plate electrodes is polysilicon from a FET gate" is taken to be a product by process limitation, it is the patentability of the claimed product and not of recited process steps which must be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324,326(CCPA 1974); In re Marosi et al., 218 USPQ 289,292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964,966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process " claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claim in "product by process" claim or not.

Art Unit: 2811

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. in view of Lee (US 6,150,701).

Wu et al. teaches all the limitations of claims 24, 25 and 27 as shown above and further teaches that the semiconductor device is a DRAM device including a peripheral circuit region (Wu et al.'s col.2 lines 20-24) and the capacitor structure isolated from other regions by isolation regions (72). Wu et al.'s Fig.7.

Wu et al. does not explicitly teach that the DRAM device further including a bipolar device region and a FET region, wherein the capacitor, bipolar device region and FET region are electrically isolated from each others by isolation regions.

Lee discloses a circuitry in a DRAM memory device comprising: a bipolar device region (Q3); a FET region (Q2), wherein bipolar device region and FET region are electrically isolated from each others by isolation region (a). See Lee's Fig.2, col.1 lines 12-22 and col.2 lines 37-45.

It would have been obvious to one of ordinary skill in the art to incorporate the circuitry as taught by Lee into Wu et al.'s DRAM device in order to stabilize the current-

Art Unit: 2811

voltage characteristic of input pad in peripheral circuit region of the DRAM memory device. See Lee's Col.7 lines 1-6.

It is noted that, the capacitor structure in Wu et al.'s device isolated from other active regions by isolation regions (72), therefore it would have been obvious to one of ordinary skill in the art, when incorporating the circuitry as taught by Lee into Wu et al.'s device, forming the bipolar device region and FET region isolating from the capacitor by isolation region.

***Allowable Subject Matter***

4. Claim 30 is allowable if rewritten to overcome the above objection.
5. Claim 29 is allowed over the references of record.
6. The reasons for allowance : none of references of record disclosed or can be combined to yield the claimed invention such as one of electrode plates of capacitor and one of electrodes of bipolar device comprise a first conductive pattern of SiGe material as recited in claims 29 and 30.
7. Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims because none of references disclosed or can be combined to yield the claimed invention such as both of plate electrode are composes of SiGe polysilicon.

Art Unit: 2811

***Response to Arguments***

8. Applicant's arguments with respect to claims 24-25 and 27-28 have been considered but are not persuasive.

Applicants argue that Wu does not teach the upper plate comprises SiGe polycrystalline. In response, the language in claim 24 does not require the lower plate formed over a semiconductor substrate and the upper plate electrode formed above the lower plate electrode", therefore the layer (102) is considered as the upper plate electrode which comprises SiGe polycrystalline.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2811

**10. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.**

**11. Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to CUONG Q NGUYEN whose telephone number is (703) 308-1293. The Examiner is in the Office generally between the hours of 6:30 AM to 5:00 PM (Eastern Standard Time) Monday through Thursday.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor TOM THOMAS who can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 308-7724.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center Receptionists whose telephone number is 308-0956.

Cuong Nguyen

May 23, 2002



TOM THOMAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800